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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,714	06/24/2003	Cheng-Wen Huang	IACP0042USA	8718
27765	7590	10/19/2004	EXAMINER	
NAIPO (NORTH AMERICA INTERNATIONAL PATENT OFFICE)			ZIMMERMAN, GLENN	
P.O. BOX 506			ART UNIT	PAPER NUMBER
MERRIFIELD, VA 22116			2879	

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/601,714

Applicant(s)

HUANG, CHENG-WEN

Examiner

Glenn Zimmerman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Drawings***

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 48b and 54a. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

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applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 10-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Huang et al. U.S. Patent 6,762,436.

Regarding claim 10, Huang et al. disclose an integrated double-sided organic light-emitting display panel comprising:

A substrate (col. 4 lines 42 and 43);

A plurality of displaying modules (col. 4 lines 42 and 43; col. 2 lines 46-53) installed on the substrate for generating a corresponding plurality of image light, each display module comprising:

A top electrode;

A bottom electrode; and

An organic light emitting layer installed between the top electrode and the bottom electrode for generating a corresponding image light (col. 3 lines 30-39); and

A control module for controlling operations of the plurality of displaying module.

The display will inherently have a control module or no display images could be created.

Regarding claim 11, Huang et al. disclose the integrated double-sided organic light-emitting display panel of claim 10 wherein if the bottom electrode of each displaying module is served as an anode of the displaying module, the image light substantially progresses along a first displaying direction which is from the organic light emitting layer toward the bottom electrode; and if the bottom electrode of each displaying module is served as a cathode of the displaying module, the image light

substantially progresses along a second displaying direction which is from the organic light emitting layer toward the top electrode (Fig. 2; col.2 lines 46-53). The examiner notes that the image light that is determined for the bottom display will progress along a first displaying direction, and the image light that is determined for the top electrode/display will progress along a second displaying direction.

Regarding claim 12, Huang et al. disclose the integrated double-sided organic light-emitting display panel of claim 11 wherein for each displaying module, the first displaying direction is mutually reversed to the second displaying direction in free space (Fig. 2).

Regarding claim 13, Huang et al. disclose the integrated double-sided organic light-emitting display panel of claim 11 wherein for each displaying module, when a first bias voltage is applied on the displaying module, of which the bottom is an anode, the image light substantially progresses along a first displaying direction which is from the organic light emitting layer toward the bottom electrode; and when a second bias voltage is applied on the displaying module, of which the bottom electrode is a cathode, the image light substantially progresses along a second displaying direction which is from the organic light emitting layer toward the top electrode. The examiner notes that the first bias and the second bias voltages are intended use.

Regarding claim 14, Huang et al. disclose the integrated double-sided organic light-emitting display panel of claim 13 wherein the first bias voltage is a reversed bias relative to the second bias. The examiner notes that biasing voltages one and two are intended use.

Regarding claim 15, Huang et al. disclose the integrated double-sided organic light-emitting display panel of claim 10 being an Organic Light Emitting Diode (OLED) display panel (OLED elements; col. 4 lines 42 and 43; col. 3 lines 30-40) or a PLED display panel.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5, 6, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chien et al. U.S. Patent Application Publication 2004/0075628 A1.

Regarding claim 1, Chien et al. teaches an integrated double-sided organic light-emitting display panel comprising: a main panel for generating main image light substantially progressing along a first displaying direction; a sub-panel for generating a sub image light substantially progressing along a second display direction; and a control module electrically connected with the main panel and the sub-panel for controlling operations of the main panel and the sub-panel; wherein the first displaying direction is mutually reversed to the second display direction in free space (Fig. 4), but fails to teach a substrate, the main-panel installed on the substrate and the sub-panel installed on the substrate. Chien in the analogous art teaches a substrate, the main-panel installed on the substrate and the sub-panel installed on the substrate (Fig. 2). Additionally, Chien

teaches incorporation of such a substrate, the main-panel installed on the substrate and the sub-panel installed on the substrate to improve the structure by using one single transparent substrate i.e. create one single panel out of two panels (paragraph 16).

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use a substrate, the main-panel installed on the substrate and the sub-panel installed on the substrate in the two OLED panels double-side display of Chien et al., since such a modification would improve the structure by using one single substrate i.e. create one single panel out of two panels as taught by Chien et al.

Regarding claim 2, Chien et al. Disclose the integrated double-sided organic light-emitting display panel of claim 1 being an Organic Light Emitting Diode (OLED) display panel or a PLED display panel (paragraph 16).

Regarding claim 3, Chien et al. Disclose the integrated double-sided organic light-emitting display panel of claim 1 wherein the main-panel comprises an upper substrate (ref. 2' or 3 of ref. 30), a bottom substrate (ref. 3 or 2' of ref. 30), and a main organic light emitting layer (ref. 1 of ref. 30) therebetween, and the sub-panel comprises an upper substrate (ref. 2' or 3 of ref. 20), a bottom substrate (ref. 3 or 2' of ref. 30), and a sub organic light emitting layer (ref. 1 of ref. 30) therebetween.

Regarding claim 5, Chien et al. Disclose the integrated double-sided organic light-emitting display panel of claim 3 wherein a first bias voltage is applied on the main-panel and a second bias voltage is applied on the sub-panel by using the control module, such that the main image light generated by the main organic light emitting

layer is progressing along the first displaying direction and the sub image light generated by the sub organic light emitting layer is progressing along the second displaying direction (Fig. 4).

Regarding claim 6, Chien et al. Disclose the integrated double-sided organic light-emitting display panel of claim 5 wherein the first bias voltage is a reversed bias relative to the second bias voltage (Fig. 4; paragraph 19).

Regarding claim 8, Chien et al. disclose wherein the substrate is a glass substrate or a plastic substrate (ref. 6). This claim is rejected for the same reasons found in claim 1.

Regarding claim 9, Chien et al. Disclose the integrated double-sided organic light-emitting display panel of claim 1 being used in a mobile phone, a PDA or other portable devices (paragraphs 1 and 2).

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chien et al. U.S. Patent Application Publication 2004/0075628 A1 in view of Ito et al. U.S. Patent 5,652,067.

Regarding claim 4, Chien et al. teaches one of the upper and lower substrates is metal, but fails to teach wherein the upper substrate and the bottom substrate are metal substrates. Ito et al. in the analogous art teaches wherein the upper substrate and the bottom substrate are metal substrates (col. 7 lines 20-42). Additionally, Ito et al. teaches incorporation of such a structure wherein the upper substrate and the bottom substrate are metal substrates to improve transparency of the electrode and provide the low surface resistivity of a metal (col. 7 lines 28-30).



Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use wherein the upper substrate and the bottom substrate are metal substrates in the double-side display of Chien, since such a modification would improve transparency of the electrode and provide the low surface resistivity of a metal as taught by Ito et al.

Claims 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chien et al. U.S. Patent Application Publication 2004/0075628 A1 in view of Raychaudhuri et al. U.S. Patent 6,558,820.

Regarding claim 7, Chien et al. teach all the limitations of claim 7, but fails to teach wherein the organic light emitting layer comprises a hole injection layer, a hole transport layer, an emitting layer, an electron injection layer, and an electron transport layer. Raychaudhuri et al. in the analogous art teaches wherein the organic light emitting layer comprises a hole injection layer, a hole transport layer, an emitting layer, an electron injection layer, and an electron transport layer (Fig. 1a, 1b). Additionally, Raychaudhuri teaches incorporation of such a light emitting layer to improve hole injection and transport as well as electron injection and transport into the emissive layer.

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have wherein the organic light emitting layer comprises a hole injection layer, a hole transport layer, an emitting layer, an electron injection layer, and an electron transport layer in the layer of Chien et al., since such a modification would improve hole injection and transport as well as electron injection and transport into the emissive layer as taught by Raychaudhuri et al.

Claims 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al. U.S. Patent 6,762,436 in view of Raychaudhuri et al. U.S. Patent 6,558,820.

Regarding claim 16, Huang teaches all the limitations of claim 16, but fails to teach wherein the organic light emitting layer comprises a hole injection layer, a hole transport layer, an emitting layer, an electron injection layer, and an electron transport layer. Raychaudhuri et al. in the analogous art teaches wherein the organic light emitting layer comprises a hole injection layer, a hole transport layer, an emitting layer, an electron injection layer, and an electron transport layer (Fig. 1a, 1b). Additionally, Raychaudhuri teaches incorporation of such a light emitting layer to improve hole injection and transport as well as electron injection and transport into the emissive layer.

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have wherein the organic light emitting layer comprises a hole injection layer, a hole transport layer, an emitting layer, an electron injection layer, and an electron transport layer in the layer of Huang et al., since such a modification would improve hole injection and transport as well as electron injection and transport into the emissive layer as taught by Raychaudhuri et al.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al. U.S. Patent 6,762,436.

Regarding claim 17, Huang et al. teach all the limitations of claim 17, but fails to teach the display panel being used in a mobile phone, a PDA, or other portable device. Huang et al. in the analogous art teach the display panel being used in a mobile phone, a PDA, or other portable device (col. 1 lines 15-20). Additionally, Huang et al. teaches

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incorporation of such a PDA with panel to improve the usefulness of display panels using OLEDs.

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use display panel being used in a mobile phone, a PDA, or other portable device with the double-side display of Huang et al., since such a modification would improve the usefulness of display panels using OLEDs as taught by Huang et al.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wakefield U.S. Patent Application Publication 2004/0080468 A1 discloses Two-Way Displays and Methods of Operating the Same. Iwafuchi U.S. Patent Application Publication 2003/0025657 A1 disclose a Light Emitting Unit. Pei et al. U.S. Patent 6,593,687 discloses a Cavity-Emission Electroluminescent Device and Method for Forming the Device. Haynes U.S. Patent 6,274,985 discloses a Bindable Electroluminescent Display. Ujihara U.S. Patent 5,304,895 discloses an Electroluminescent Display Panel.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenn Zimmerman whose telephone number is (571) 272-2466. The examiner can normally be reached on M-W 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh D Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Glenn Zimmerman



Vip Patel  
Primary Examiner  
AU 2879